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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,515	01/26/2004	James A. Smith	KLA1P095/P1072	1036

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EXAMINER	
SHECHTMAN, SEAN P	

ART UNIT	PAPER NUMBER
2125	

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/765,515	SMITH ET AL.	
	Examiner	Art Unit	
	Sean P. Shechtman	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 January 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/26/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-19 are presented for examination.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. See page 11, line 30 – page 12, line 15 of the instant specification.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description: Fig. 2, columns 0 and 512 (See page 10, lines 18-20 of the instant specification).

4. The drawings are objected to because, referring to elements 114a and 114b in Fig. 5, examiner respectfully submits that distributoion should be rephrased distribution.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional

replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

Referring to page 14, line 5, examiner respectfully submits that Fig. 4 shows the I/O channels, not Fig. 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2, 5-12, and 16-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "the number of data transfer paths" in lines 1-2. Claim 5 recites the limitation "the images corresponding to each of the device areas" in line 5. Claim 6 recites the limitation "for each die" in line 3. Claim 6 recites the limitation "the second composite images" in line 5. Claim 8 recites the limitation "for each die" in line 3. Claim 9 recites the limitation "for each die" in line 3. Claim 9 recites the limitation "the second composite images" in line 5. Claim 10 recites the limitation "the images corresponding to each

of the device areas" in line 5. Claim 12 recites the limitation "for each die" in line 3. Claim 16 recites the limitation "the images corresponding to each of the device areas" in line 5. Claim 17 recites the limitation "for each die" in line 3. Claim 17 recites the limitation "the second composite images" in line 5. Claim 19 recites the limitation "for each die" in line 3. There is insufficient antecedent basis for these limitations in the claims.

7. Due to the number of 35 USC § 112 rejections, the examiner has provided a number of examples of the claim deficiencies in the above rejections, however, the list of rejections may not be all inclusive. Applicant should refer to these rejections as examples of deficiencies and should make all the necessary corrections to eliminate the 35 USC § 112 problems and place the claims in proper format.

8. Due to the vagueness and a lack of clear definition of the terminology and phrases used in the specification and claims, the claims have been treated on their merits as best understood by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 5,761,064 to La.

Referring to claim 13, La teaches a system of detecting features on a semiconductor wafer (Abstract) comprising:

a wafer having a plurality of device areas (Fig. 4, element 156);

collecting data with a plurality of detectors that are positioned about the semiconductor wafer (Col. 3, lines 23-28; Col. 5, lines 31-53), wherein each detector collects a data frame for each of a plurality of device areas (Col. 4, lines 40-45; Col. 3, lines 23-28);

transmitting the data frames from each detector to a data distribution node (Fig. 1B, elements 50, 54, and 56; Col. 4, line 40-64), which is part of a set of data distribution nodes (Fig. 1B, elements 50, 54, and 56);

a plurality of data transfer paths connecting each of the distribution nodes (See paths in Fig. 1B), wherein each data transfer path transfers data frames collected by a respective detector (Col. 4, lines 40-64);

a plurality of processing nodes configured to receive data frames from the data distribution system, the processing nodes configured to analyze the data frames, wherein the data transfer paths allow data frames collected by a detector to be routed to a processing node (Col. 5, lines 31-64).

Examiner respectfully asserts that the claims, as such, do not require that the data frame collected for each device area be data related to any of the device areas. Basically, examiner asserts that the data frames analyzed, routed, transferred, transmitted, and processed, is any raw data of any type, and the claims, as such, do not require any limitations as to what type of data is analyzed, routed, transferred, transmitted, and processed.

Referring to claim 14, La teaches a computer-implemented method as recited in claim 13 further comprising: buffering data frames within data distributor buffers within each data distribution node (Col. 5, lines 1-14).

Referring to claim 15, La teaches a computer-implemented method as recited in claim 13 wherein each detector collects data for each of three or more device areas (Fig. 4).

10. Claims 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Pat. No. 6,701,259 to Dor.

Referring to claim 13, Dor teaches a system of detecting features on a semiconductor wafer comprising:

a wafer having a plurality of device areas (Fig. 7, element 713; Col. 15, lines 18-21);

collecting data with a plurality of detectors that are positioned about the semiconductor wafer (Col. 1, lines 26-36; Col. 2, lines 60-66; Col. 3, lines 21-31; Col. 4, lines 64-66), wherein each detector collects a data frame for each of a plurality of device areas (Fig. 7, element 713; Col. 15, lines 18-21);

transmitting the data frames from each detector to a data distribution node (Col. 3, lines 14-15), which is part of a set of data distribution nodes (Fig. 1, 104, 104, 104);

a plurality of data transfer paths connecting each of the distribution nodes (See network of Fig. 1), wherein each data transfer path transfers data frames collected by a respective detector (See paths in Fig. 1);

a plurality of processing nodes configured to receive data frames from the data distribution system (Col. 3, lines 15-16), the processing nodes configured to analyze the data

frames (Col. 3, lines 42-52; Col. 3, line 63 – Col. 4, line 6), wherein the data transfer paths allow data frames collected by a detector to be routed to a processing node (Fig. 1, element 110).

Examiner respectfully asserts that the claims, as such, do not require that the data frame collected for each device area be data related to any of the device areas. Basically, examiner asserts that the data frames analyzed, routed, transferred, transmitted, and processed, is any raw data of any type, and the claims, as such, do not require any limitations as to what type of data is analyzed, routed, transferred, transmitted, and processed.

Referring to claim 14, Dor teaches a computer-implemented method as recited in claim 13 further comprising: buffering data frames within data distributor buffers within each data distribution node (Fig. 1, element 162a).

Referring to claim 15, Dor teaches a computer-implemented method as recited in claim 13 wherein each detector collects data for each of three or more device areas (See Fig. 7, element 713).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 1, 3, 4, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,933,351 to Balamurugan in view of "How Networks Work" by Derfler.

Referring to claims 1 and 13, Balamurugan teaches a computer-implemented method and system for detecting features on a semiconductor wafer (Abstract; Col. 2, line 23 – Col. 3, line 49) comprising:

collecting data with a plurality of detectors (Col. 2, lines 58-59) that are positioned about the semiconductor wafer (See Fig. 1, element 22), wherein each detector collects a data frame for each of a plurality of device areas (Col. 2, lines 58-59);

transmitting the data frames from each detector to a node (Col. 2, lines 48-51),

routing the data frames from the node to a processor (Fig. 1, element 30; Col. 2, line 51);

processing the data frames within the processing node (Fig. 1, element 20);

Examiner respectfully asserts that the claims, as such, do not require that the data frame collected for each device area be data related to any of the device areas. Furthermore, examiner respectfully asserts that claim 1, as such, does not even require that the first and second data frames transferred between a first and second data distribution node be the same data frames collected by the detectors. Basically, examiner asserts that the data analyzed, routed, transferred, transmitted, and processed, is any raw data of any type, and the claims, as such, do not require any limitations as to what type of data is analyzed, routed, transferred, transmitted, and processed.

Balamurugan clearly teaches a computer that receives data from sensors that collect a data frame for each of a plurality of device areas of a wafer (Col. 2, lines 48-51). This data is received via a video interface system (Fig. 1, element 30; Col. 2, line 51) and routed to a processing system that processes data (Fig. 1, element 20).

Referring to claims 4 and 15, Balamurugan teaches a computer-implemented method as recited in claims 1 and 13 wherein each detector collects data for each of three or more device areas (Fig. 2).

Referring to claims 1 and 13, Balamurugan teaches transmitting the data frames from each detector to a node, however, Balamurugan fails to teach a node is among a set of nodes. Balamurugan teaches routing the data frames from the node to a processor, however, Balamurugan fails to teach data is routed from among data distribution nodes to processing nodes. Balamurugan teaches processing the data frames within the processing node, however, Balamurugan fails to teach processing the data frames within each of the processing nodes. Furthermore, while Balamurugan teaches the ability to transfer data between a node and a processor allows data from detectors to be routed to a processing node, Balamurugan fails to teach transferring a first data frame along a first data transfer path that connects a first and a second data distribution node; transferring a second data frame along a second data transfer path that connects the first and second data distribution nodes; and wherein the transferring of data frames between data distribution nodes allows data from a detector to be routed to a processing node.

However, referring to claims 1 and 13, Derfler teaches how networks work (title). Derfler is clearly analogous in that Balamurugan teaches a computer and Derfler teaches how networks work with computers.

Derfler teaches transmitting data frames to data distribution node, which is part of a set of data distribution nodes (See routers on pages 150-151);

routing the data frames from the data distribution nodes to processing nodes (See computers on page 150 or the workgroup server on page 150);

processing the data frames within each of the processing nodes (See computers on page 150 or the workgroup server on page 150; See page 55); Examiner asserts that the computers have CPU's that process data received from the routers. In any case, Derfler clearly teaches a network interface card on pages 91-93 required to interface the computers to a LAN, wherein at least the network interface card can transmit and receive data from the network and the network card has a processor (See pages 91-93);

transferring a first data frame along a first data transfer path that connects a first and a second data distribution node (See page 150, one of line between the routers with layer-2 switch); transferring a second data frame along a second data transfer path that connects the first and second data distribution nodes (See page 150, the other line between the routers with layer-2 switch); and

wherein the transferring of data frames between data distribution nodes allows data to be routed to a processing node (See computers on page 150 or the workgroup server on page 150, or see the reference to the network cards above).

Referring to claims 3 and 14, Derfler teaches a computer-implemented method as recited in claims 1 and 13 further comprising:

buffering data frames within data distributor buffers within each data distribution node (See page 147).

Therefore, it would have been obvious to one of ordinary skill in the art at the time that the invention was made to combine the teachings of Derfler with the teachings of Balamurugan.

One of ordinary skill in the art would have been motivated to combine theses references because Derfler teaches that when routers connect LANs, it doesn't matter what kind of hardware the LAN segments use, and because multiprotocol routers are available, the LAN segments don't even have to use the same network communications protocol. Furthermore, Derfler teaches that routers act as a safety barrier between the network segments and often contain firewall services. Further still, Derfler teaches that routers reduce the total number of bits going across an inter-LAN communications link (See page 147). Further still, Derfler teaches networked systems or distributed computing systems spread the computing workload among PCs on a network (See page 55). Further still, Derfler goes on to teach how networks are more reliable on page 55. Further still, Derfler teaches that should a computer lack a network interface card (although most don't), you can easily connect an external network interface card (See page 109).

12. Claims 1, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,761,064 to La in view of "How Networks Work" by Derfler. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,761,064 to La in view of U.S. Pat. No. 6,415,188 to Fernandez.

Referring to claims 1, La teaches a computer-implemented method of detecting features on a semiconductor wafer (Abstract) comprising:

collecting data with a plurality of detectors that are positioned about the semiconductor wafer (Col. 3, lines 23-28; Col. 5, lines 31-53), wherein each detector collects a data frame for each of a plurality of device areas (Col. 4, lines 40-45; Col. 3, lines 23-28);

transmitting the data frames from each detector to a data distribution node (Fig. 1B, elements 50, 54, and 56; Col. 4, line 40-64), which is part of a set of data distribution nodes (Fig. 1B, elements 50, 54, and 56);

routing the data frames from the data distribution nodes to processing nodes (See paths in Fig. 1B);

processing the data frames within each of the processing nodes (Col. 5, lines 31-64);

transferring a first data frame along a first data transfer path that connects a first and a second data distribution node (See, for example, the path from element 56 to element 60); and

wherein the transferring of data frames between data distribution nodes allows data from a detector to be routed to a processing node (Col. 5, lines 31-64);

Referring to claims 3, La teaches a computer-implemented method as recited in claims 1 further comprising: buffering data frames within data distributor buffers within each data distribution node (Fig. 1B, elements labeled CB).

Referring to claims 4, La teaches a computer-implemented method as recited in claims 1 wherein each detector collects data for each of three or more device areas (Fig. 4).

Referring to claim 1, La fails to teach transferring a second data frame along a second data transfer path that connects the first and second data distribution nodes.

Examiner respectfully asserts that the claims, as such, do not require that the data frame collected for each device area be data related to any of the device areas. Furthermore, examiner respectfully asserts that claim 1, as such, does not even require that the first and second data frames transferred between a first and second data distribution node be the same data frames collected by the detectors. Basically, examiner asserts that the data frames analyzed, routed, transferred, transmitted, and processed, is any raw data of any type, and the claims, as such, do not require any limitations as to what type of data is analyzed, routed, transferred, transmitted, and processed.

However, referring to claim 1, Derfler teaches how networks work (title). Derfler is clearly analogous in that La teaches a computer network and Derfler teaches how networks work with computers.

Derfler teaches transmitting data frames to data distribution node, which is part of a set of data distribution nodes (See routers on pages 150-151);

transferring a first data frame along a first data transfer path that connects a first and a second data distribution node (See page 150, one of line between the routers with layer-2 switch); transferring a second data frame along a second data transfer path that connects the first and second data distribution nodes (See page 150, the other line between the routers with layer-2 switch).

Therefore, it would have been obvious to one of ordinary skill in the art at the time that the invention was made to combine the teachings of Derfler with the teachings of La.

One of ordinary skill in the art would have been motivated to combine Derfler with La because Derfler teaches that when routers connect LANs, it doesn't matter what kind of hardware the LAN segments use, and because multiprotocol routers are available, the LAN segments don't even have to use the same network communications protocol. Furthermore, Derfler teaches that routers act as a safety barrier between the network segments and often contain firewall services. Further still, Derfler teaches that routers reduce the total number of bits going across an inter-LAN communications link (See page 147). Further still, Derfler teaches networked systems or distributed computing systems spread the computing workload among PCs on a network (See page 55). Further still, Derfler goes on to teach how networks are more reliable on page 55. Further still, Derfler teaches that should a computer lack a network interface card (although most don't), you can easily connect an external network interface card (See page 109).

Referring to claim 1, La fails to teach transferring a second data frame along a second data transfer path that connects the first and second data distribution nodes.

Examiner respectfully asserts that the claims, as such, do not require that the data frame collected for each device area be data related to any of the device areas. Furthermore, examiner respectfully asserts that claim 1, as such, does not even require that the first and second data frames transferred between a first and second data distribution node be the same data frames collected by the detectors. Basically, examiner asserts that the data frames analyzed, routed, transferred, transmitted, and processed, is any raw data of any type, and the claims, as such, do

not require any limitations as to what type of data is analyzed, routed, transferred, transmitted, and processed.

However, referring to claim 1, Fernandes teaches analogous art (Col. 3, lines 1-10 of '188), including transferring a first data frame along a first data transfer path that connects a first and a second data distribution node and transferring a second data frame along a second data transfer path that connects the first and second data distribution nodes (Col. 6, lines 57-67 of '188).

Referring to claim 2, Fernandez teaches a computer-implemented method as recited in claim 1 wherein the number of data transfer paths equals the number of detectors that is used to collect data (Col. 6, lines 57-67; Fig. 4, elements 88 and 88 of '188).

Therefore, it would have been obvious to one of ordinary skill in the art at the time that the invention was made to combine the teachings of Fernandez with the teachings of La.

One of ordinary skill in the art would have been motivated to combine Fernandez with La because Fernandez teaches a multi-sensor system that enables interactive sensing coupled to a network for simulation and/or communication (Col. 1, lines 25-35 of '188). Furthermore, Fernandez teaches real-time sensory feedback collected, computed, and transmitted from a smart sensor array that provides for advanced ways of improving networking and control, and thus increase the quality or communication and user interactivity (Col. 7, lines 20-25 of '188).

13. Claims 1, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,701,259 to Dor in view of "How Networks Work" by Derfler. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,701,259 to Dor in view of U.S. Pat. No. 6,415,188 to Fernandez.

Referring to claims 1, Dor teaches a computer-implemented method of detecting features on a semiconductor wafer (Abstract) comprising:

collecting data with a plurality of detectors that are positioned about the semiconductor wafer (Col. 1, lines 26-36; Col. 2, lines 60-66; Col. 3, lines 21-31; Col. 4, lines 64-66), wherein each detector collects a data frame for each of a plurality of device areas (Fig. 7, element 713; Col. 15, lines 18-21);

transmitting the data frames from each detector to a data distribution node (Col. 3, lines 14-15), which is part of a set of data distribution nodes (Fig. 1, 104, 104, 104);

routing the data frames from the data distribution nodes to processing nodes (Col. 3, lines 15-16);

processing the data frames within each of the processing nodes (Col. 3, lines 42-52; Col. 3, line 63 – Col. 4, line 6);

transferring a first data frame along a first data transfer path that connects a first and a second data distribution node (See network of Fig. 1); and

wherein the transferring of data frames between data distribution nodes allows data from a detector to be routed to a processing node (Col. 3, lines 42-52; Col. 3, line 63 – Col. 4, line 6);

Referring to claims 3, Dor teaches a computer-implemented method as recited in claims 1 further comprising: buffering data frames within data distributor buffers within each data distribution node (Fig. 1, element 162a).

Referring to claims 4, Dor teaches a computer-implemented method as recited in claims 1 wherein each detector collects data for each of three or more device areas (Fig. 7, element 713).

Referring to claim 1, Dor fails to teach transferring a second data frame along a second data transfer path that connects the first and second data distribution nodes.

Examiner respectfully asserts that the claims, as such, do not require that the data frame collected for each device area be data related to any of the device areas. Furthermore, examiner respectfully asserts that claim 1, as such, does not even require that the first and second data frames transferred between a first and second data distribution node be the same data frames collected by the detectors. Basically, examiner asserts that the data frames analyzed, routed, transferred, transmitted, and processed, is any raw data of any type, and the claims, as such, do not require any limitations as to what type of data is analyzed, routed, transferred, transmitted, and processed.

However, referring to claim 1, Derfler teaches how networks work (title). Derfler is clearly analogous in that Dor teaches a computer network and Derfler teaches how networks work with computers.

Derfler teaches transmitting data frames to data distribution node, which is part of a set of data distribution nodes (See routers on pages 150-151);

transferring a first data frame along a first data transfer path that connects a first and a second data distribution node (See page 150, one of line between the routers with layer-2 switch); transferring a second data frame along a second data transfer path that connects the first and second data distribution nodes (See page 150, the other line between the routers with layer-2 switch).

Therefore, it would have been obvious to one of ordinary skill in the art at the time that the invention was made to combine the teachings of Derfler with the teachings of Dor.

One of ordinary skill in the art would have been motivated to combine Derfler with Dor because Derfler teaches that when routers connect LANs, it doesn't matter what kind of hardware the LAN segments use, and because multiprotocol routers are available, the LAN segments don't even have to use the same network communications protocol. Furthermore, Derfler teaches that routers act as a safety barrier between the network segments and often contain firewall services. Further still, Derfler teaches that routers reduce the total number of bits going across an inter-LAN communications link (See page 147). Further still, Derfler teaches networked systems or distributed computing systems spread the computing workload among PCs on a network (See page 55). Further still, Derfler goes on to teach how networks are more reliable on page 55. Further still, Derfler teaches that should a computer lack a network interface card (although most don't), you can easily connect an external network interface card (See page 109).

Referring to claim 1, Dor fails to teach transferring a second data frame along a second data transfer path that connects the first and second data distribution nodes.

Examiner respectfully asserts that the claims, as such, do not require that the data frame collected for each device area be data related to any of the device areas. Furthermore, examiner respectfully asserts that claim 1, as such, does not even require that the first and second data frames transferred between a first and second data distribution node be the same data frames collected by the detectors. Basically, examiner asserts that the data frames analyzed, routed, transferred, transmitted, and processed, is any raw data of any type, and the claims, as such, do not require any limitations as to what type of data is analyzed, routed, transferred, transmitted, and processed.

However, referring to claim 1, Fernandes teaches analogous art (Col. 3, lines 1-10 of '188), including transferring a first data frame along a first data transfer path that connects a first and a second data distribution node and transferring a second data frame along a second data transfer path that connects the first and second data distribution nodes (Col. 6, lines 57-67 of '188).

Referring to claim 2, Fernandez teaches a computer-implemented method as recited in claim 1 wherein the number of data transfer paths equals the number of detectors that is used to collect data (Col. 6, lines 57-67; Fig. 4, elements 88 and 88 of '188).

Therefore, it would have been obvious to one of ordinary skill in the art at the time that the invention was made to combine the teachings of Fernandez with the teachings of Dor.

One of ordinary skill in the art would have been motivated to combine Fernandez with Dor because Fernandez teaches a multi-sensor system that enables interactive sensing coupled to

a network for simulation and/or communication (Col. 1, lines 25-35 of '188). Furthermore, Fernandez teaches real-time sensory feedback collected, computed, and transmitted from a smart sensor array that provides for advanced ways of improving networking and control, and thus increase the quality or communication and user interactivity (Col. 7, lines 20-25 of '188).

14. Claims 5-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,761,064 to La in view of ("How Networks Work" by Derfler or U.S. Pat. No. 6,415,188 to Fernandez), as applied to claim 1 above, and further in view of U.S. Pat. No. 6,721,939 to Wang. Claims 5-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,701,259 to Dor in view of ("How Networks Work" by Derfler or U.S. Pat. No. 6,415,188 to Fernandez), as applied to claim 1 above, and further in view of U.S. Pat. No. 6,721,939 to Wang. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,761,064 to La, as applied to claim 13 above, and further in view of U.S. Pat. No. 6,721,939 to Wang. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,701,259 to Dor, as applied to claim 13 above, and further in view of U.S. Pat. No. 6,721,939 to Wang.

Referring to claims 5-12 and 16-19, Dor teaches comparing test results to a defect database (Col. 1, lines 26-50; Fig. 8, 11, and 12).

Referring to claims 5-12 and 16-19, La and Dor fail to teach every limitation of claims 5-12 and 16-19.

However, Wang teaches analogous art (Abstract of '939), wherein:

Referring to claims 5 and 16, Wang teaches a computer-implemented method as recited in claim 1 wherein the processing of data further comprises a composite-row based analysis that involves, generating a first composite image that is made up of each of the data frames collected by one of the detectors, wherein each first composite image is a composite of the images corresponding to each of the device areas; generating a first composite image corresponding to the data frames collected by each of the detectors; and comparing each of the first composite images in order to obtain defect information. Referring to claims 6 and 17, Wang teaches a computer-implemented method as recited in claim 5 wherein the processing of data further comprises a composite-column based analysis that involves, for each die, generating a second composite image by combining the data frames collected by each detector corresponding to a specific die; and comparing each of the second composite images in order to obtain defect information. Referring to claims 7 and 18, Wang teaches a computer-implemented method as recited in claim 6 wherein the processing of data further comprises a row based analysis involving, for each detector, comparing the data frames collected for each of the plurality of device areas, wherein there are four or more device areas. Referring to claims 8 and 19, Wang teaches a computer-implemented method as recited in claim 7 wherein the processing of data further comprises a column based analysis involving, for each die, comparing the data frames collected by each detector. Referring to claim 9, Wang teaches a computer-implemented method as recited in claim 1 wherein the processing of data further comprises a composite-column based analysis that involves, for each die, generating a second composite image by combining the data frames collected by each detector corresponding to a specific die; and comparing each of the second composite images in order to obtain defect information. Referring to claim 10, Wang

teaches a computer-implemented method as recited in claim 9 wherein the processing of data further comprises a composite-row based analysis that involves, generating a first composite image that is made up of each of the data frames collected by one of the detectors, wherein each first composite image is a composite of the images corresponding to each of the device areas; generating a first composite image corresponding to the data frames collected by each of the detectors; and comparing each of the first composite images in order to obtain defect information. Referring to claim 11, Wang teaches a computer-implemented method as recited in claim 10 wherein the processing of data further comprises a row based analysis involving, for each detector, comparing the data frames collected for each of the plurality of device areas, wherein there are four or more device areas. Referring to claim 12, Wang teaches a computer-implemented method as recited in claim 11 wherein the processing of data further comprises a column based analysis involving, for each die, comparing the data frames collected by each detector (Fig. 2-9; claim 1-20 of '939).

Therefore, it would have been obvious to one of ordinary skill in the art at the time that the invention was made to further modify the teaching of Dor or La with the teachings of Wang.

One of ordinary skill in the art would have been motivated to combine Wang with Dor or La because Wang teaches determining an optimal shot range for critical dimension uniformity and suitable optical proximity correction rules. Furthermore, Wang teaches shot size linearity data can be used to avoid shot sizes having poor linearity (Col. 3, lines 10-34 of '939).

Conclusion

15. The prior art or art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents or publications are cited to further show the state of the art with respect to a semiconductor inspection facility with a network router.

U.S. Patent No. 6,370,487 to Dorough.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Shechtman whose telephone number is (703) 305-7798. The examiner can normally be reached on 9:30am-6:00pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (703) 308-0538. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SPS

Sean P. Shechtman

July 9, 2004

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